

# Indoor Heat Exchanger

## REPLACEMENT INSTRUCTIONS

### For Use With Rinnai Tankless Water Heaters

#### Fixed Bypass

- RE140i (REU-VE1720FFD-US)
- RE160i (REU-VE2125FFD-US)
- REP160i (REU-VEP2125FFD-US)
- REP199i (REU-VEP2730FFD-US)

#### Variable Bypass

- RE180i (REU-VE2432FFD-US)
- RE199i (REU-VE2737FFD-US)

### **WARNING**

Failure to correctly assemble the components according to these instructions may result in electric shock, injury or death.

### **CAUTION**

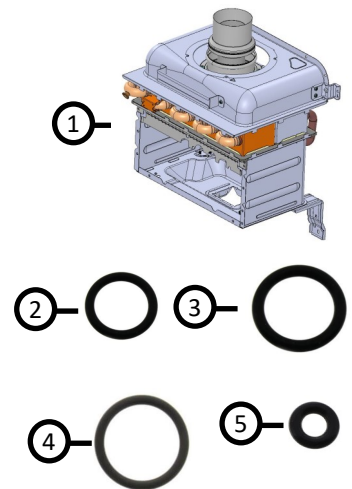
To protect yourself from harm, before performing maintenance:

- Turn off the electrical power supply by unplugging the power cord or by turning off the electricity at the circuit breaker. (The temperature controller does not control the electrical power.)
- Turn off the gas at the manual gas valve, usually located immediately below the water heater.
- Turn off the incoming water supply. This can be done at the isolation valve immediately below the water heater or by turning off the water supply to the building.

## Items Inside Product Box

Before installation, please ensure all parts are located inside the product box.

Item	Item Name	Qty	
		Fixed Bypass	Variable Bypass
1	Indoor Heat Exchanger	1	1
2	Small O-Ring (M10B-2-14)	1	3
3	Medium O-Ring (M10B-2-16)	1	0
4	Large O-Ring (M10B-2-18K)	2	2
5	Thermistor O-Ring (M10B-2-4)	1	1
6	Manifold Packings (Refer Fig. 21 for details)	N/A	



## Instructions

### TOOLS/MATERIALS REQUIRED

- ☐ Phillips head screwdriver



#### Important

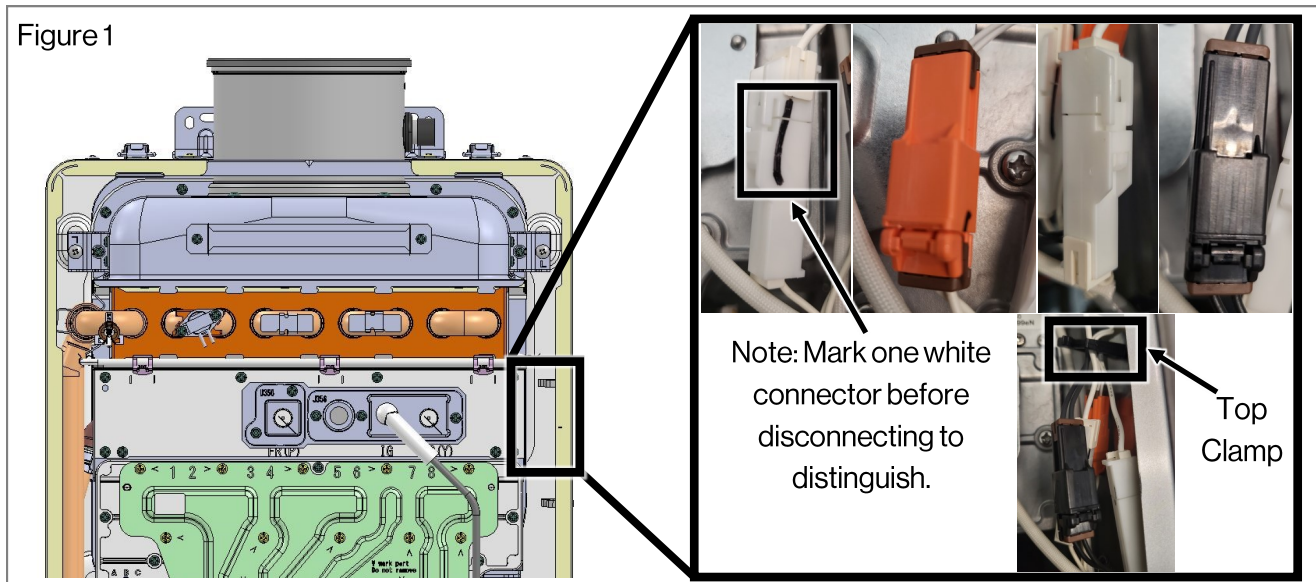
When following the instructions below, inspect any existing O-rings carefully, taking care not to scratch, damage, or misplace the O-rings. Water heater with large HEX, variable bypass and without pump is shown as representative for all illustrations and instructions unless otherwise specified.

1. Turn off and disconnect 120 V power supply.
2. Turn off water supply.
3. Turn off gas supply.
4. Release pressure and drain water from water heater.
5. Remove the bottom two screws securing front panel and open top two latches. Remove front panel.

# Rinnai

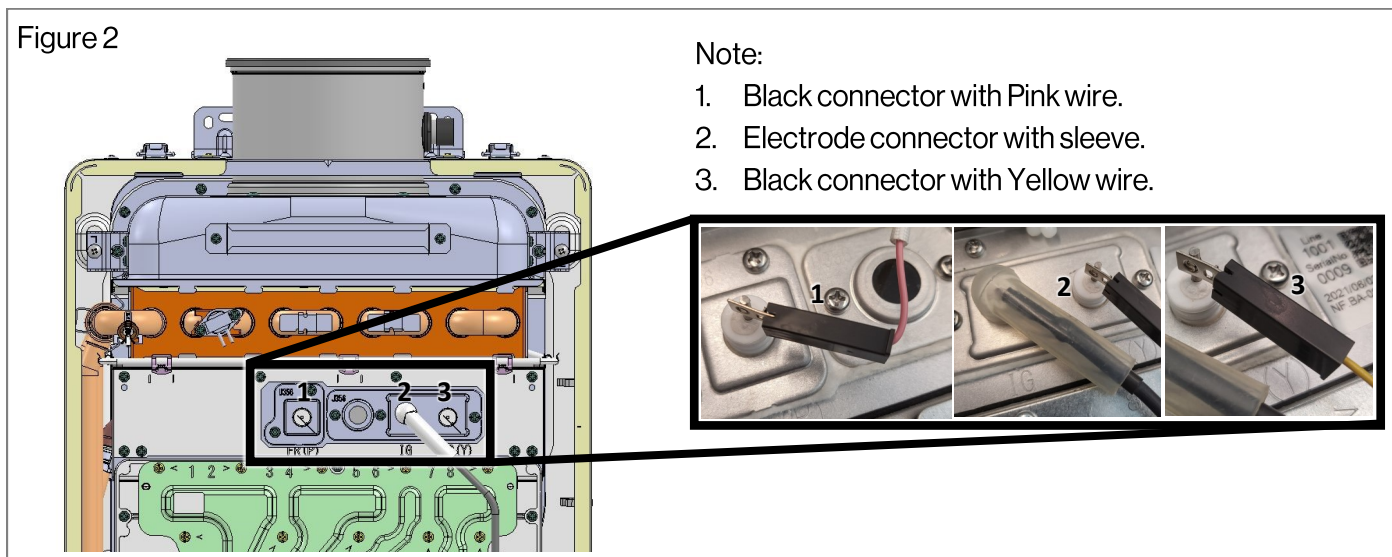
6. Remove all connector wires from top clamp. Disconnect two white connectors, an orange connector, and a black connector (Figure 1).

Figure 1



7. Disconnect two flame rod connectors (Black) and an electrode connector (high tension connector) (Figure 2).

Figure 2



8. Disconnect the main blue connector located under top clamp on the right side of water heater connecting solenoid harness to main PCB (Figure 3).
9. Remove one screw securing controller assembly to water heater (Figure 4). Position the controller to gain access to the ignitor assembly.

Figure 3

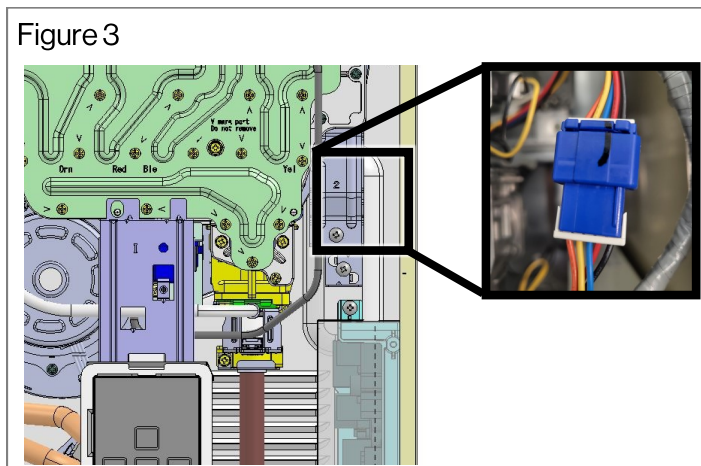
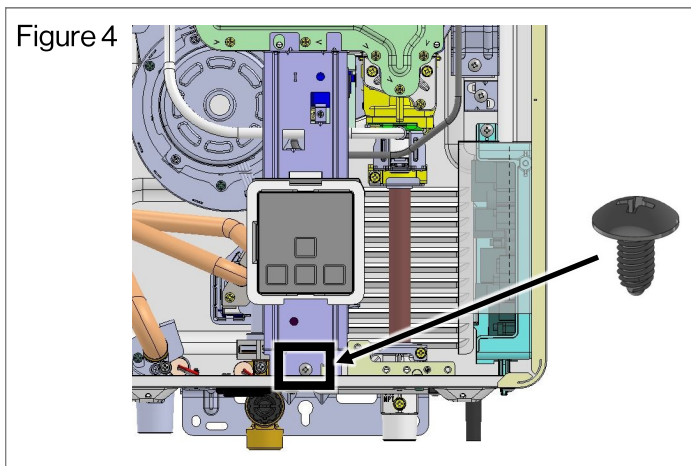
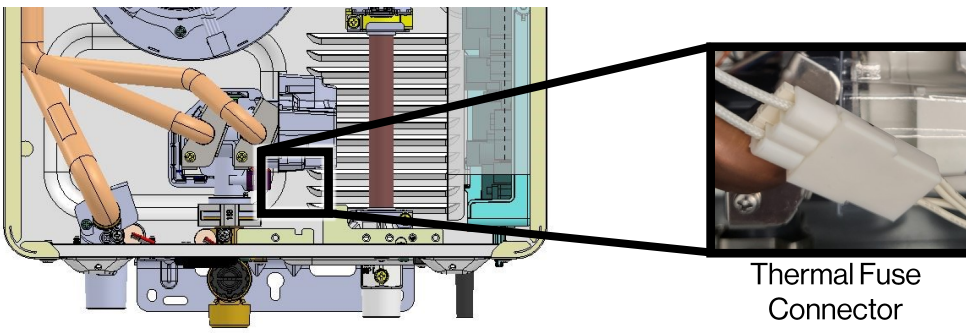


Figure 4



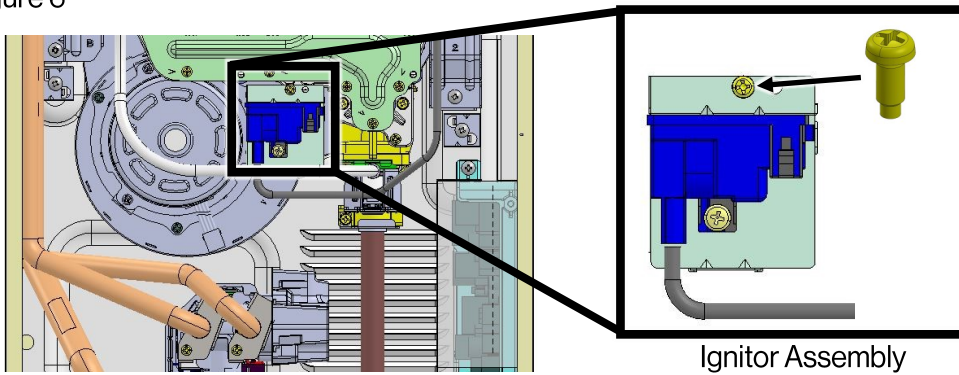
10. Disconnect the white thermal fuse connector located near waterflow servo assembly (Figure 5).

Figure 5



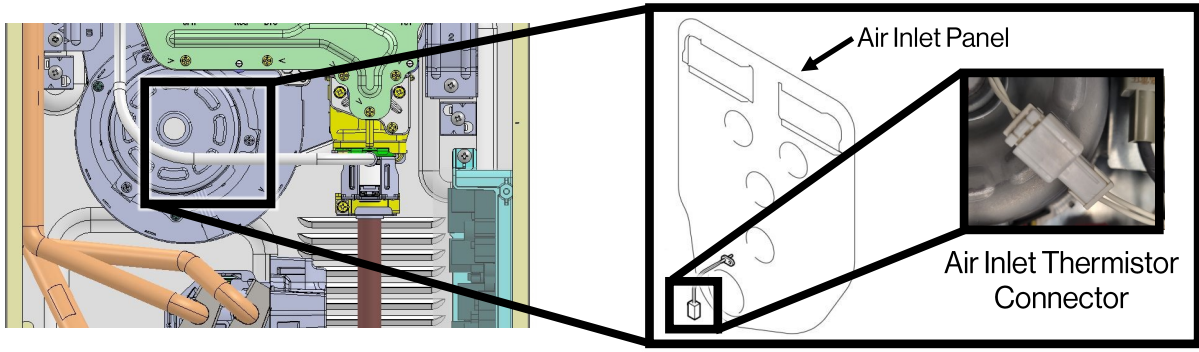
11. Remove one screw securing ignitor assembly to water heater. Position ignitor assembly (Figure 6).

Figure 6



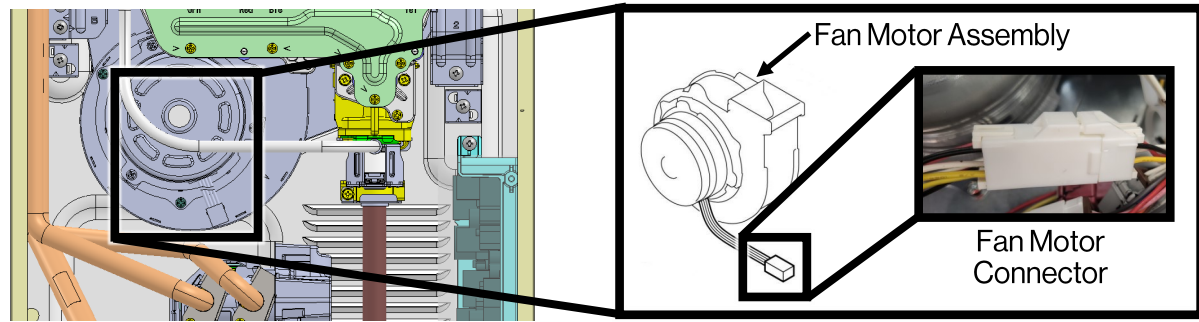
12. Disconnect white air inlet thermistor connector located near fan motor assembly (Figure 7).

Figure 7



13. Disconnect white fan motor connector located near fan motor assembly (Figure 8).

Figure 8

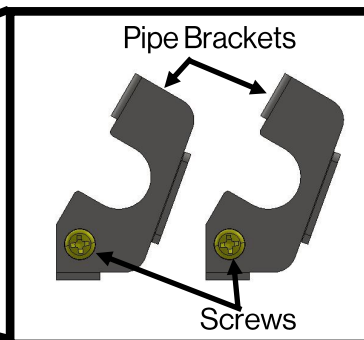
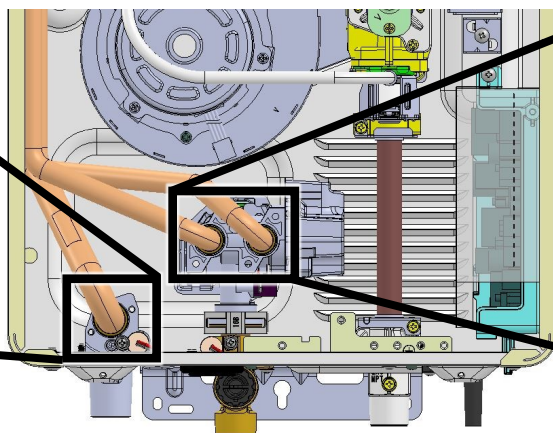
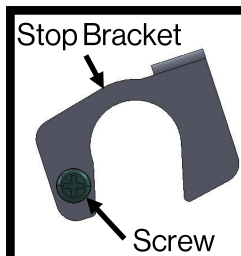


14. Remove one screw and one stop bracket connecting to the outlet pipe. Remove two screws and two pipe brackets connecting to the two pipes on the bypass servo (**Note:** For models with fixed bypass, remove one screw and one pipe bracket connecting a pipe on the bypass servo) (Figure 9).

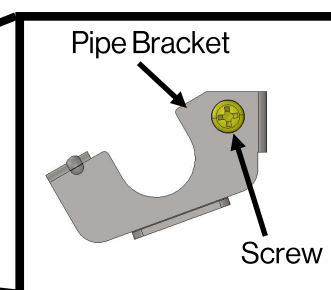
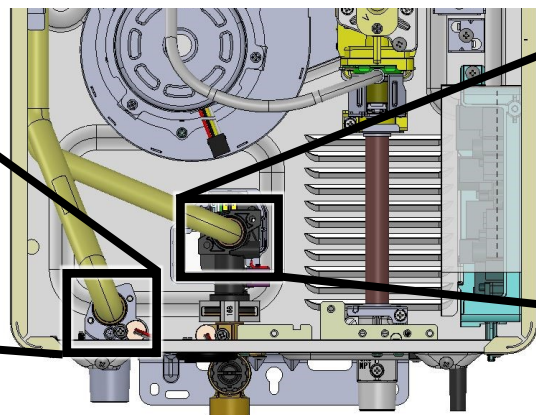
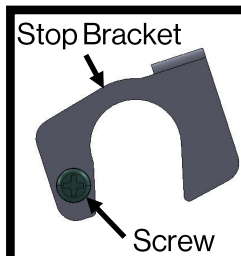


Figure 9

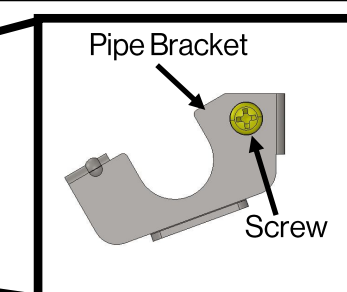
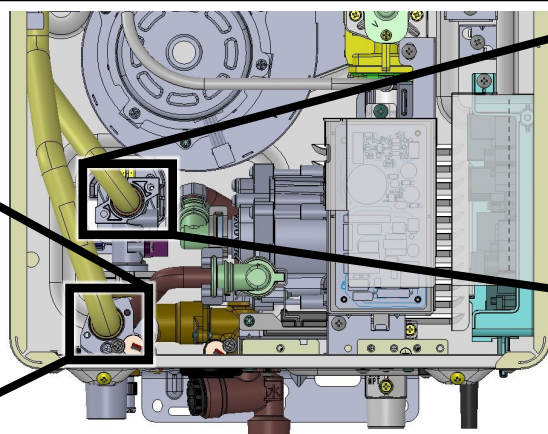
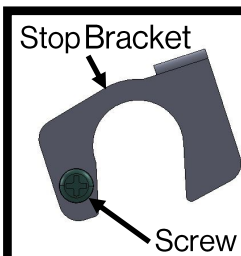
**For Model with Variable Bypass:**



**For Model with Fixed Bypass:**

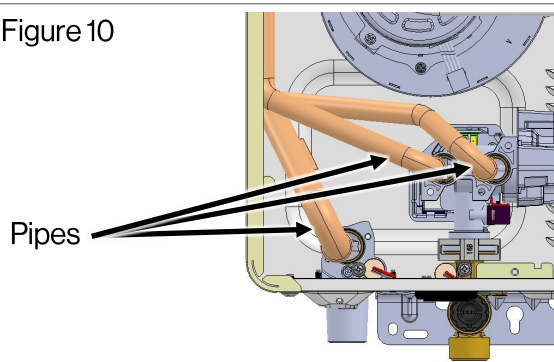


**For Model with Pump & Fixed Bypass:**



15. Remove one pipe from hot water outlet and two pipes from bypass servo (**Note:** For models with fixed bypass, remove one pipe from hot water outlet and one pipe from bypass servo) (Figure 10).

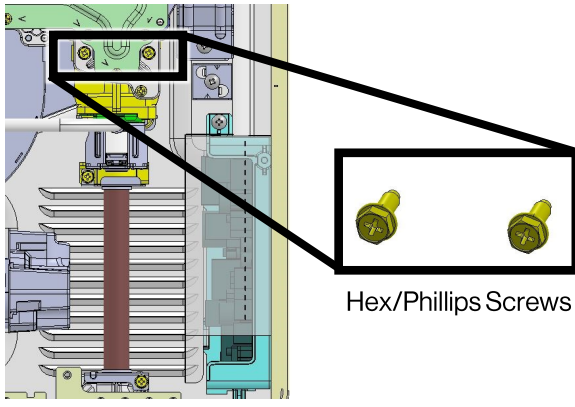
Figure 10



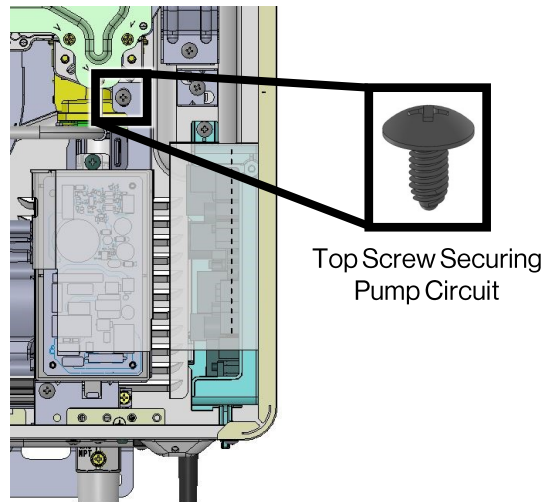
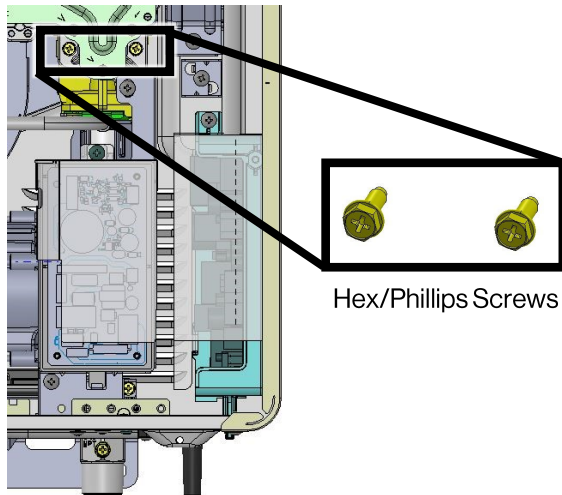
16. Remove two Hex/Phillips screws securing the gas valve assembly to gas manifold (**Note:** For models with pump, remove two Hex/Phillips screws securing the gas valve assembly and remove top screw securing pump circuit (Figure 11)).

Figure 11

**For Model without Pump:**



**For Model with Pump:**



17. Slide the gas pipe down with the gas valve assembly (**Note:** For models with pump, position pump circuit to gain access and slide down the gas pipe valve assembly) (Figure 12).

18. Remove two screws securing back pressure connector and position back pressure connector (Figure 13).

Figure 12

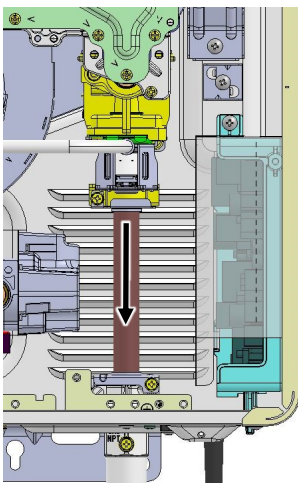
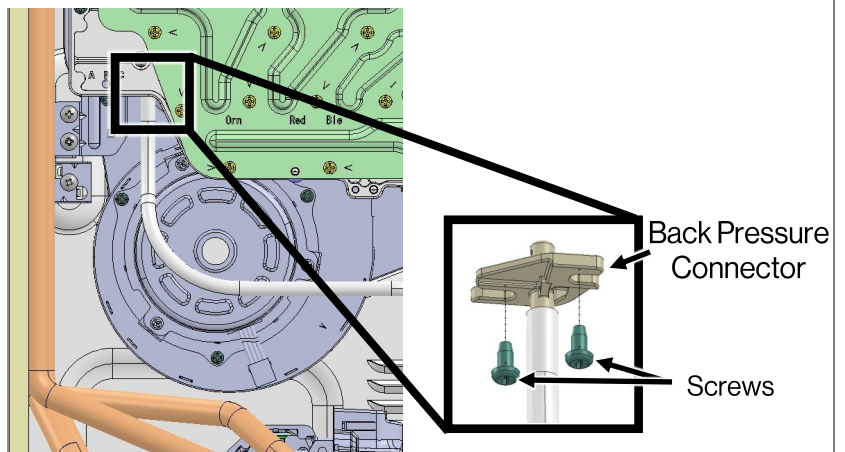
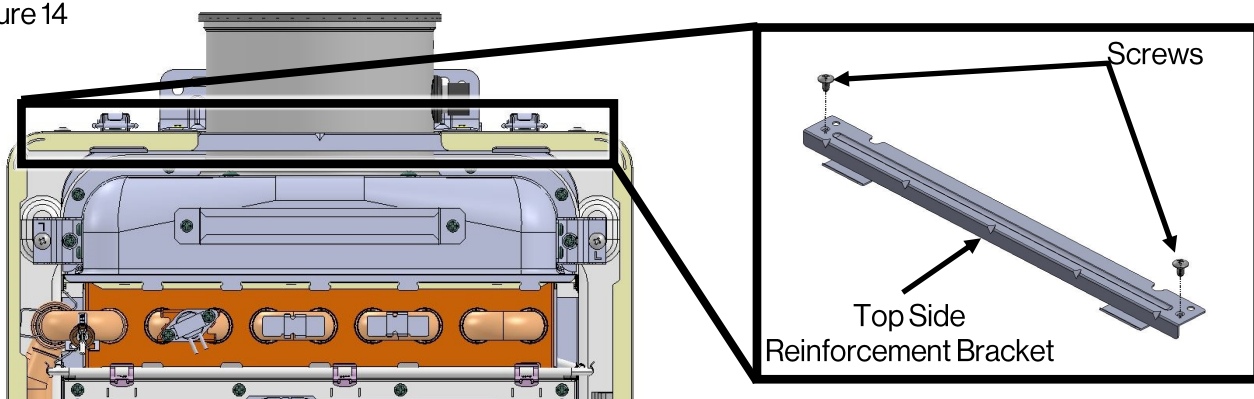


Figure 13



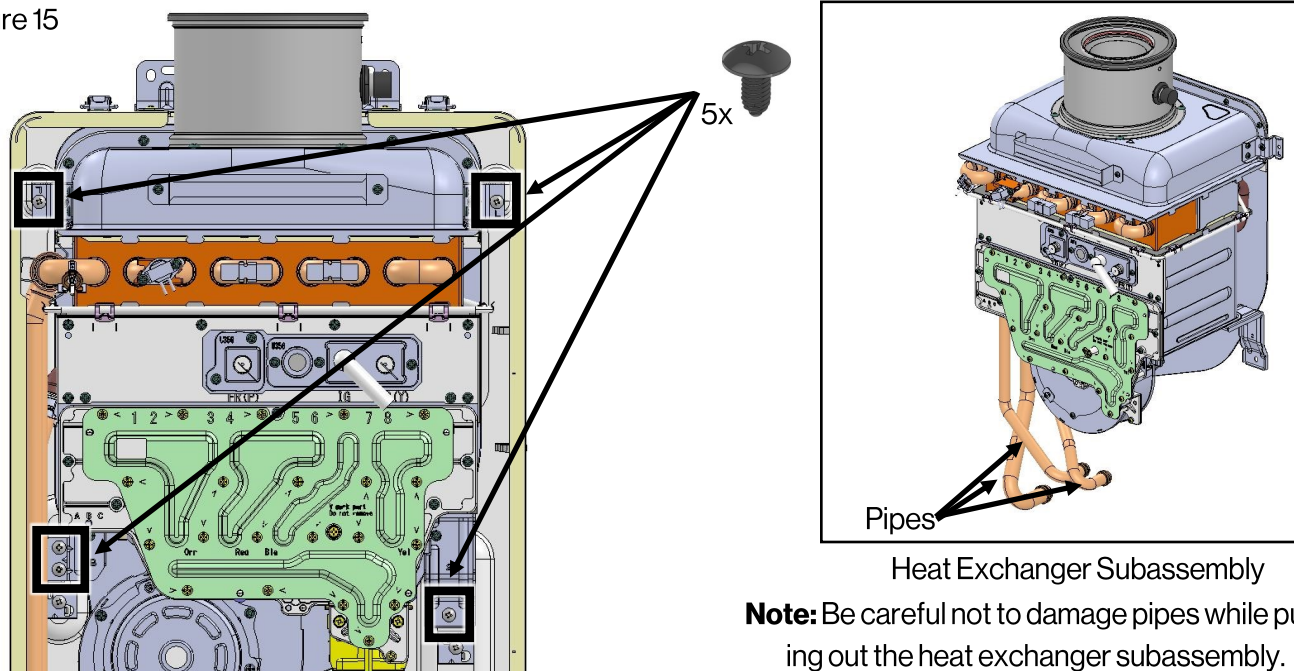
19. Remove two screws and top side reinforcement bracket from the top of the water heater (Figure 14).

Figure 14



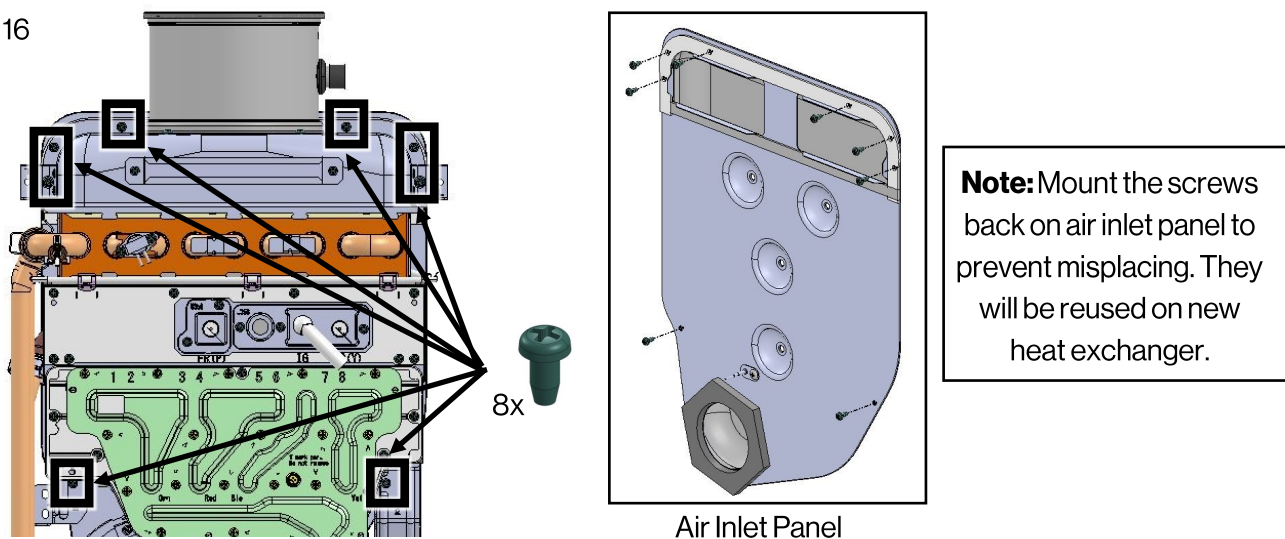
20. Remove top two screws, two screws on bottom-left above fan, and one screw on bottom-right above PCB. Carefully pull out the Heat exchanger subassembly (includes heat exchanger, combustion fan assembly and burner unit assembly). (Figure 15).

Figure 15



21. Remove eight screws securing air inlet panel to heat exchanger and disconnect air inlet panel (Figure 16).

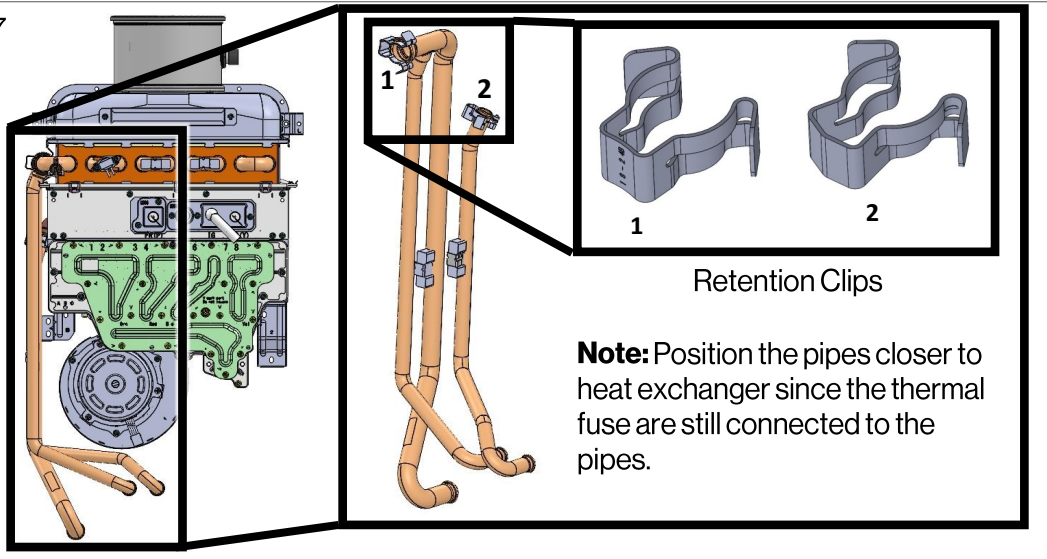
Figure 16





22. Remove the retention clips connecting pipes to heat exchanger and position pipes (Figure 17).

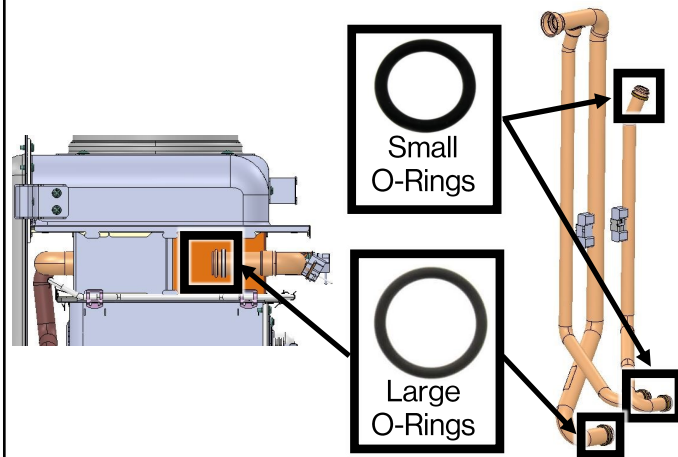
Figure 17



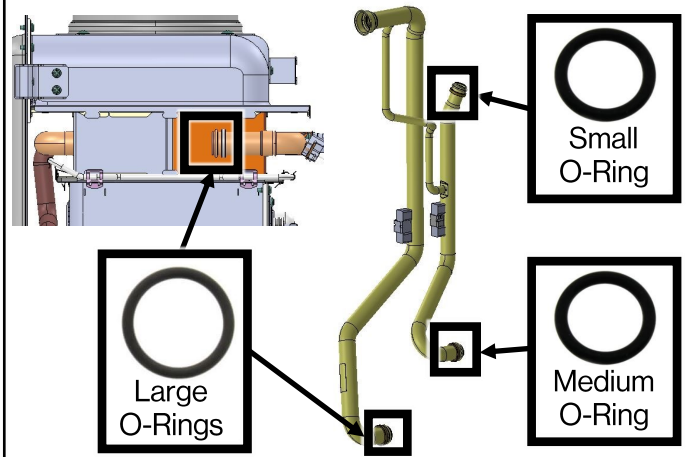
23. Remove existing O-rings and install new O-rings to the pipes. (Figure 18).

Figure 18

**For Model with Variable Bypass:**



**For Model with Fixed Bypass:**



24. Remove four screws securing fan motor assembly to heat exchanger. (Figure 19).

25. Remove four screws securing flue connection assembly to heat exchanger (Figure 20).

Figure 19

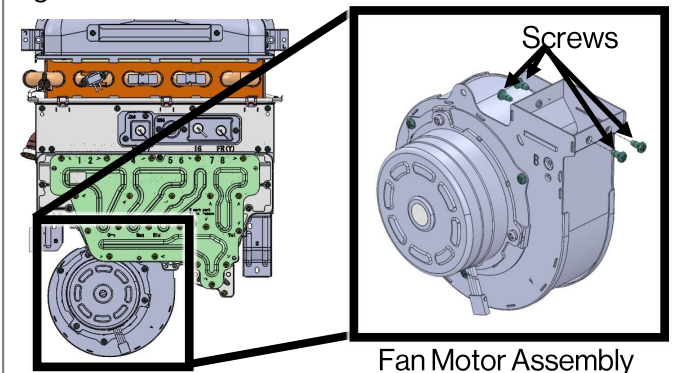
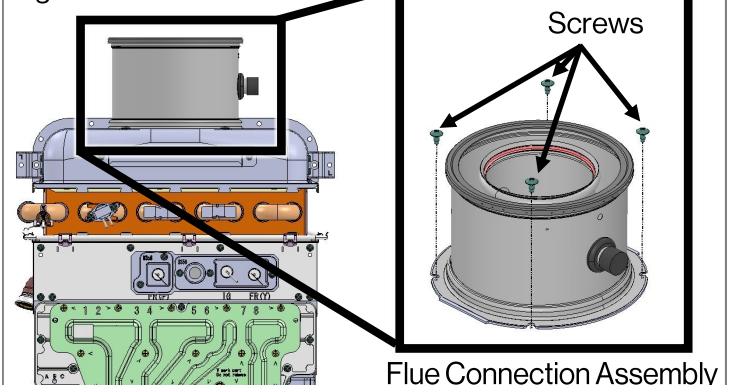
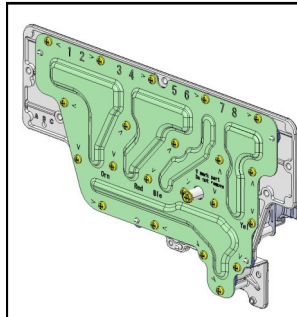
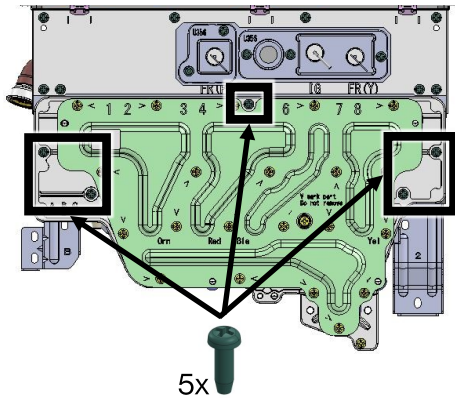


Figure 20



26. Remove five screws securing manifold assembly to heat exchanger (**Note**: If required after removing the manifold, replace the current manifold packings with new manifold packings) (Figure 21).

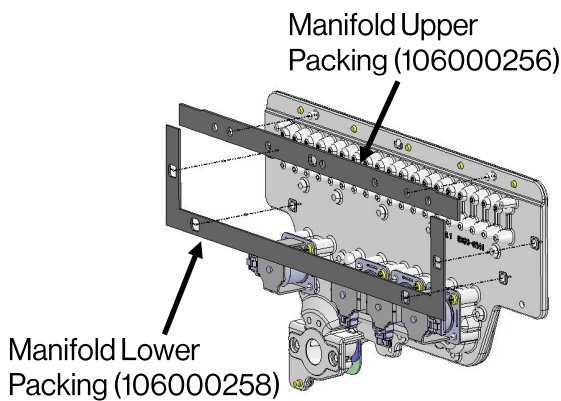
Figure 21



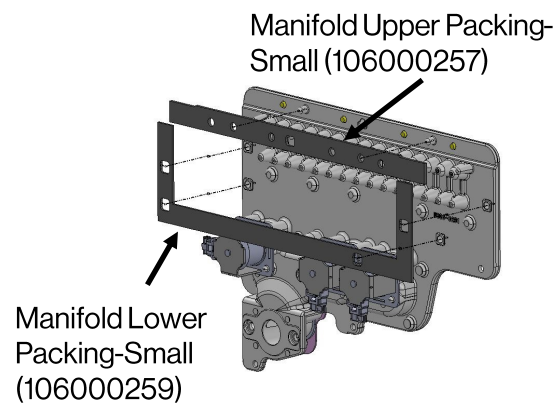
Note: Inspect Manifold Packings. If required, replace manifold packings as shown for large HEX or small HEX. Ensure that packings are aligned properly to prevent any leakage.

Manifold Assembly

**For Model with Large HEX:**

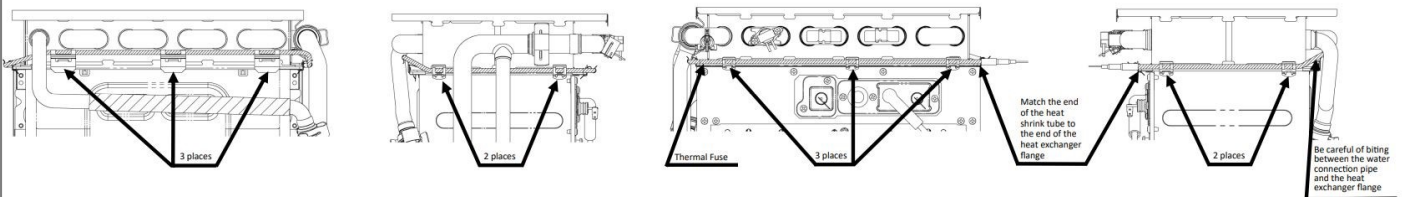


**For Model with Small HEX:**



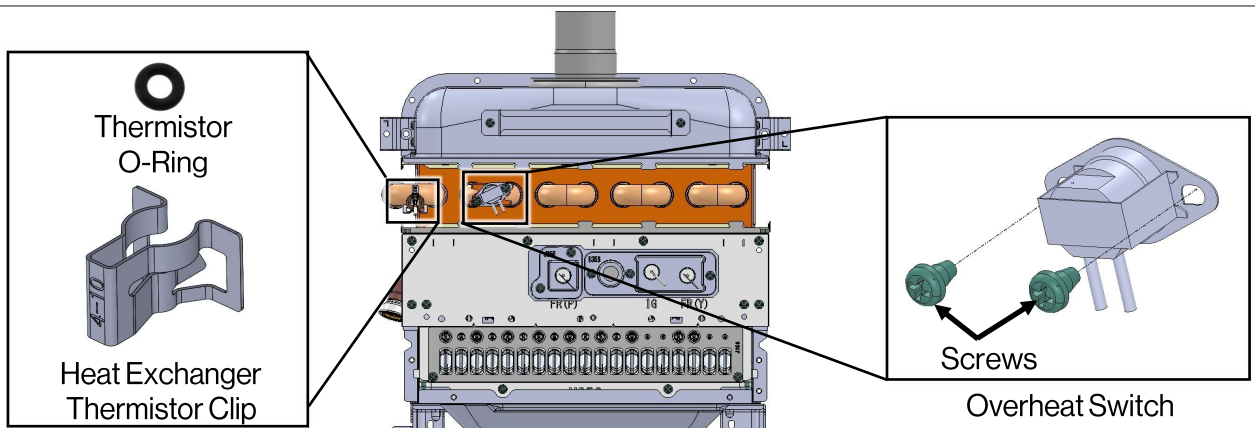
27. Remove thermal fuse with thermal holder from existing heat exchanger and reassemble on the new heat exchanger (Figure 22).

Figure 22



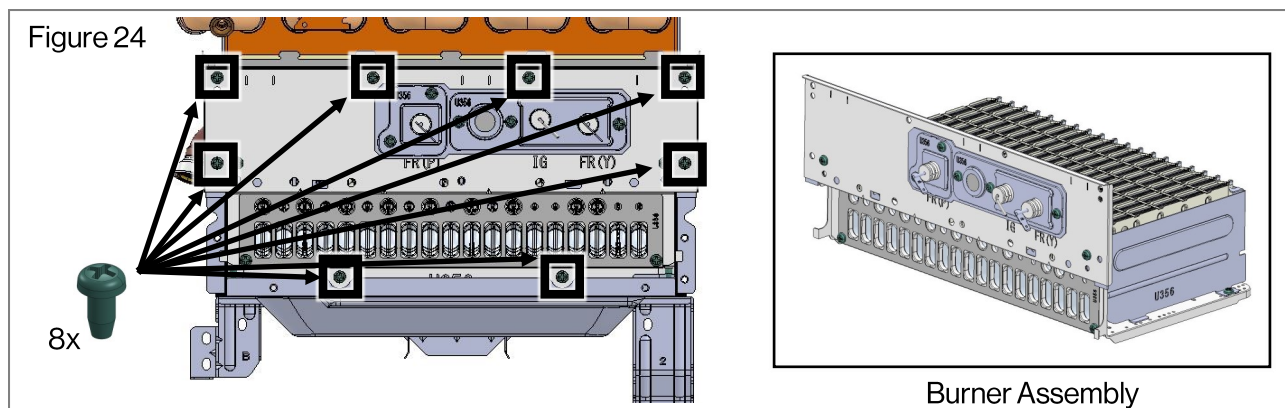
28. Remove heat exchanger thermistor clip to take out heat exchanger thermistor, replace the current thermistor O-ring with new one, and remove two screws to take out overheat switch. (Figure 23).

Figure 23





29. Remove eight screws securing burner assembly. Pull out burner assembly from existing heat exchanger and reassemble on the new heat exchanger (Figure 24).



30. Reinstall heat exchanger thermistor using thermistor clip to secure and remount overheat switch on new heat exchanger (Figure 23).
31. Reinstall manifold assembly using five screws on new heat exchanger (Figure 21).
32. Reinstall flue connection assembly using four screws on new heat exchanger (Figure 20).
33. Reinstall fan motor assembly using four screws on new heat exchanger (Figure 19).
34. Reinstall pipes with new O-rings using retention clips on new heat exchanger (Figure 17).
35. Reinstall air inlet panel using eight screws on new heat exchanger assembly (Figure 16).
36. Carefully slide in heat exchanger subassembly (includes heat exchanger, combustion fan assembly and burner unit assembly) and secure using five screws (Figure 15).
37. Reinstall top side reinforcement bracket using two screws on the water heater (Figure 14).
38. Reinstall back pressure connector using two screws on new heat exchanger (Figure 13).
39. Slide the gas pipe up to align with mounting holes and remount Hex/Phillips screws to secure gas valve on gas manifold (**Note:** For model with pump, slide the gas pipe up to align with mounting holes, remount Hex/Phillips screws to secure gas valve on gas manifold and remount a screw to pump circuit) (Figure 11) (Figure 12).
40. Remount the hot water outlet pipe on hot water outlet and other two pipes on bypass servo (**Note:** For model with fixed bypass, remount the hot water outlet pipe on hot water outlet and other on bypass servo) (Figure 10).
41. Reinstall a stop bracket and pipe brackets to secure pipes (**Note:** For model with fixed bypass, reinstall a stop bracket and a pipe bracket) (Figure 9).
42. Reconnect air inlet thermistor connector and fan motor connector (Figure 8) (Figure 7).
43. Position ignitor assembly to gas manifold and secure with one Phillips screw (Figure 6).
44. Reconnect white connector to thermal fuse harness (Figure 5).
45. Assemble controller assembly and secure assembly to water heater (Figure 4).
46. Reconnect main blue connector connecting solenoid harness to main PCB (Figure 3).
46. Reconnect two flame rod connectors and an electrode connector. Ensure to mount the sleeve on electrode connector properly (Figure 2).
47. Reconnect two white connectors, an orange connector and a black connector and remount connector wires on top clamp (Figure 1).
48. Reconnect and turn on 120 V power supply, water supply and gas supply.
49. Install front panel and secure using bottom two screws and top two latches.
50. Test fire unit.